REMARKS

Reconsideration and withdrawal of the rejections set forth in the Office Action dated September 23, 2004 are respectfully requested.

Rejections Under 35 U.S.C. 103(a)

The Examiner has rejected claims 1-14 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,360,038 to Grubsky.

Grubsky teaches a wavelength-selective optical device having cladding-mode assisted coupling used to couple light from one optical waveguide to another. The cladding mode assisted coupling includes a step of intermediate coupling to one or more of the cladding modes of the waveguides. The device couples light with no back-reflection, small insertion loss, and very high channel isolation. Because the device uses three stages of coupling, channel isolation is very high and the insertion loss is minimized (column 2, lines 41-44).

The device is wavelength-selective, where the "wavelength(s) of operation can be adjusted by a proper choice of the grating period of the long-period grating" (column 8, lines 61-64). The device is "tunable" in the sense that the period of the long-period grating depends on the wavelength of light coupled through the device. Each particular wavelength, therefore, necessitates a specific coupler with a specific grating period corresponding to the wavelength.

The present invention, as recited in claims 1-14, is drawn to an apparatus and method for coupling light while compensating for a Bragg wavelength shift. The output waveguide has a Bragg grating with an adjusted grating period to compensate for a Bragg wavelength shift. As discussed in the specification, the present invention discloses methods and apparatus to correct for the Bragg wavelength shift in a grating assisted direct coupler. Correction of the shift avoids inaccuracy in the center wavelength position of optical filters based on a grating assisted direct coupler. Therefore, the grating period needs to be specifically adjusted to compensate for this shift.

It is acknowledged that the period of a long-period or Bragg grating is tunable because the grating period depends on the wavelength of light desired to be coupled. However, one skilled in the art at the time of Grubsky would not be motivated to adjust the grating period from the nominal period used for a certain wavelength of light to an adjusted period compensating for a Bragg shift because Grubsky merely indicates the dependence of grating period to wavelength, and does not mention the occurrence of Bragg shifts in couplers. In fact, Grubsky is not concerned with shifts of wavelength: "long-period gratings do not cause loss for non-resonant wavelengths" (column 2, lines 37-38) and "light coupling via a long-period grating is sufficiently efficient when the grating's periodicity is chosen to satisfy a phase-matching condition between the two coupled optical modes" (column 6, lines 53-55).

Therefore, it would not be obvious to one of ordinary skill in the art at the time of the invention to recognize tuning the Bragg grating to compensate for a Bragg wavelength shift in Grubsky to provide the device with improved coupling efficiency since the gratings of Grubsky "do not cause loss for non-resonant wavelengths" and are "sufficiently efficient" without any combinations. Since Grubsky only mentions a coupler is tunable to indicate the dependence of grating period to wavelengths, and never mentions the effect of Bragg shift (nor a method of correction), applicant believes the claims to be unobvious over Grubsky and therefore patentable.

In view of the above response, applicant believes the pending application is in condition for allowance. Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-0665, under Order No. 384828011US from which the undersigned is authorized to draw.

Dated: December 28, 2004   Respectfully submitted,
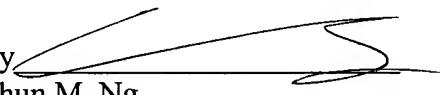
By
Chun M. Ng
     Registration No.: 36,878
PERKINS COIE LLP
P.O. Box 1247
Seattle, Washington 98111-1247
(206) 359-8000
(206) 359-7198 (Fax)
Attorney for Applicant